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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,434	01/14/2004	Feisal Y. Daruwalla	CISCP134C1/8803	5662

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EXAMINER	
SAMUEL, DEWANDA A	

ART UNIT	PAPER NUMBER
2464	

NOTIFICATION DATE	DELIVERY MODE
03/29/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@wavsip.com

Office Action Summary	Application No.	Applicant(s)	
	10/758,434	DARUWALLA ET AL.	
	Examiner	Art Unit	
	DEWANDA SAMUEL	2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 12-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,12-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the communication filed on 03/10/2010. Claims 1,12-32 are pending , claims 2-11 were cancelled and claims 12-33 were added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1, 12,16-18,21,23,27,28,29,32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Beser (US Patent 6,212,563) in view of Laubach et al. (US Patent 6,028,860).

With regard to claim 1, An apparatus for routing packets from a first network node to a second network node in a data network, comprising: means for assigning and then sending one or more unique first node identifiers (IDs) to the first node. **Beser disclose having a system and method for allocating IP address for network devices using dynamic host configuration protocol (DHCP) wherein the DCHP server returns the requested IP every time the IP address is requested, (see Abstract). Beser further disclose having a telephony remote access concentrator (TRAC) 24 generating IP address for cable modems 16 interpreted as a " first node" whereby the client identifier is a function of the IP address interpreted as "unique first**

node identifiers", (see col.13 lines 20-67). Beser also teach the IP address are sent are sent to the cable modems, (see col.13 lines 20-67), wherein at least one of the one or more unique first node IDs is assigned and sent in response to a request from the first node for an identity assignment. **(see col. 12 lines 17-67), a cable modem interpreted as a "first node" receiving an IP address after a request from a DCHP server)**,wherein each of the one or more unique first node IDs is assigned by one or more entities other than the first node. **Beser further disclose having a telephony remote access concentrator (TRAC) 24 generating IP address for cable modems 16 interpreted as a " first node" whereby the client identifier is a function of the IP address interpreted as "unique first node identifiers", (see col.13 lines 20-67).**

However, Berser don to teach each of the each of the one or more unique first node IDs is associated with a first virtual private network (VPN).). **Laubach et al. disclose having a cable television network 104 comprising virtual connection information being used to identify on or more subscriber terminal units (STU) interpreted as "first node", (see col.7 lines 27-30). Laubach et al. further disclose having a destination station ID associated with a virtual path identifier , (see col. 19 lines 4-11 and fig.14). It is inferred the virtual path identifier is relative to a virtual network environment.)**;means for receiving a packet from the first node, said packet including at least one unique first node ID and routing information for routing said packet to a destination address associated with said second node. **Laubach et al. disclose having a Ethernet leaf processor 804 receiving an Ethernet frame and transmitting the**

frame which includes a destination station ID interpreted as "second node" , (see col. 18 lines 47-67,col. 19 lines 1-11 and fig. 14) ; and means for routing the received packet to the destination address based on the received routing information and the received at least one unique first node ID and the destination address being associated with the first VPN. **Laubach et al. further disclose having a destination station ID associated with a virtual path identifier, (see col. 19 lines 4-11 and fig.14). It is inferred the virtual path identifier is relative to a virtual network environment.)**.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement a VPN mechanism which is taught by Laubach al. into Beser cable system efficiently providing wide-area connections to external networks. One will have the motivation to implement a virtual scheme within a network in order to provide a scaled down network whereby reducing cost of physical components needed for communication.

With regard to claims 12 and 23, a method of routing packets from a first network node to a second network node in a data network, comprising: assigning and then sending one or more unique first node identifiers (IDs) to the first node. **Beser disclose having a system and method for allocating IP address for network devices using dynamic host configuration protocol (DHCP) wherein the DCHP server returns the requested IP every time the IP address is requested, (see Abstract). Beser further disclose having a telephony remote access concentrator (TRAC) 24**

generating IP address for cable modems 16 interpreted as a " first node" whereby the client identifier is a function of the IP address interpreted as "unique first node identifiers", (see col.13 lines 20-67). Beser also teach the IP address are sent are sent to the cable modems, (see col.13 lines 20-67), wherein at least one of the one or more unique first node IDs is assigned and sent in response to a request from the first node for an identity assignment. **(see col. 12 lines 17-67), a cable modem interpreted as a "first node" receiving an IP address after a request from a DCHP server)**, wherein each of the one or more unique first node ID is assigned by one or more entities other than the first node. **Beser further disclose having a telephony remote access concentrator (TRAC) 24 generating IP address for cable modems 16 interpreted as a " first node" whereby the client identifier is a function of the IP address interpreted as "unique first node identifiers", (see col.13 lines 20-67).**

However, Berser don to teach each of the one or more unique first node IDs is associated with a first virtual private network (VPN). **Laubach et al. disclose having a cable television network 104 comprising virtual connection information being used to identify on or more subscriber terminal units (STU) interpreted as "first node", (see col.7 lines 27-30). Laubach et al. further disclose having a destination station ID associated with a virtual path identifier , (see col. 19 lines 4-11 and fig.14). It is inferred the virtual path identifier is relative to a virtual network environment.)**; receiving a packet from the first node, said packet including at least one

unique first node ID and routing information for routing said packet to a destination address associated with said second node. **Laubach et al. disclose having a Ethernet leaf processor 804 receiving an Ethernet frame and transmitting the frame which includes a destination station ID interpreted as "second node" , (see col. 18 lines 47-67,col. 19 lines 1-11 and fig. 14)** ; and routing the received packet to the destination address based on the received routing information and the received at least one unique first node ID and the destination address being associated with the first VPN. **Laubach et al. further disclose having a destination station ID associated with a virtual path identifier, (see col. 19 lines 4-11 and fig.14). It is inferred the virtual path identifier is relative to a virtual network environment.)**.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement a VPN mechanism which is taught by Laubach al. into Beser cable system efficiently providing wide-area connections to external networks. One will have the motivation to implement a virtual scheme within a network in order to provide a scaled down network whereby reducing cost of physical components needed for communication.

With regard to claims 16 and 27, Beser further teach the received packet is routed to the second node in a manner that does not cause the received packet to be routed through a VPN customer edge device. **Beser disclose having TRAC 24 routing IP datagrams destined to and IP broadcast address which is across the cable**

network 14, (see col. 8 lines 55-67). It is inferred the IP datagrams are not routed through edge device, rather the IP datagrams are transmitted within the cable system.

With regard to claims 17 and 28, Beser further teach the received packet is routed to the second node in a manner that does not cause the received packet to be routed outside an access network that includes the first and second nodes. **Beser disclose having TRAC 24 routing IP datagrams destined to and IP broadcast address which is across the cable network 14, (see col. 8 lines 55-67).**

With regard to claims 18 and 29, Beser further teach wherein the one or more unique first node IDs include an ID of the first node that is specific to a network on which the first and second network nodes reside. **Beser disclose having IP address with a client identifier used as a function Fn (IP address) = 'NBB' + IP address, (see col.13 lines 45-49). It is inferred in combination the client identifier and the IP address distinction cable modems and their location.**

With regard to claims 21 and 32, Beser further teach the one or more unique first node IDs include an IP address associated with the first node. **Beser disclose having IP address with a client identifier used as a function Fn (IP address) = 'NBB' + IP address, (see col.13 lines 45-49). It is inferred in combination the client identifier**

and the IP address distinction cable modems and their location.

4. Claims 13,15,20,24,26,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beser (US Patent 6,212,563) and Laubach et al. (US Patent 6,028,860) as applied to claim 12 above, and further in view of Lim et al. (US Patent 5,884,024).

With regard to claims 13 and 24, Beser further teach the first node is a cable modem and the one or more unique first node IDs include a DOCSIS Service ID (SID) and an Internet Protocol (IP) address for the first node. **Beser disclose having IP address with a client identifier iused as a function Fn (IP address) = 'NBB' + IP address, (see col.13 lines 45-49). It is inferred in combination the client identifier and the IP address distinction cable modems and their location.**

However, Beser do not explicitly teach wherein the request is a Dynamic Host Configuration Protocol (DHCP) request , wherein the IP address is assigned and sent in response to the DHCP request and based on a media access control (MAC) address of the first node as specified in the DHCP request. **Lim et al. disclose having a client system sending a DCHPREQUEST message which includes leas identification cookie (i.e. MAC address) requesting for a IP address lease, (see col. 6 lines 38-28-67 and col. 7 lines 40-45).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement DCHPREQUEST which is taught by Lim et al. into Beser cable system efficiently utilizing a DCHPREQUEST message comprised of device information , in order to manage a plurality of clients within a cable syste. One will have the motivation to utilize a DCHPREQUEST message so that a plurality of IP addresses is obtain and other configuration information is exchange in a single message.

With regard to claims 15 and 26, However, Berser do not explicitly teach one or more unique first node IDs include an Internet Protocol (IP) address for the first node, wherein the request is a Dynamic Host Configuration Protocol (DHCP) request, wherein the IP address is assigned and sent in response to the DHCP request and based on a media access control (MAC) address of the first node as specified in the DHCP request. **Lim et al. disclose having a client system sending a DCHPREQUEST message which includes leas identification cookie (i.e. MAC address) requesting for a IP address lease, (see col. 6 lines 38-28-67 and col. 7 lines 40-45).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement DCHPREQUEST which is taught by Lim et al. into Beser cable system efficiently utilizing a DCHPREQUEST message comprised of device information , in order to manage a plurality of clients within a cable syste. One will have the motivation to utilize a DCHPREQUEST message so that a plurality of IP

addresses is obtain and other configuration information is exchange in a single message.

With regard to claims 20 and 31, However, Beser do not teach wherein the one or more unique first node IDs include a MAC address of the first node. **Lim et al. disclose having a client system sending a DCHPREQUEST message which includes leas identification cookie (i.e. MAC address) requesting for a IP address lease, (see col. 6 lines 38-28-67 and col. 7 lines 40-45).**
Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement

5. Claims 14,19,25,30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beser (US Patent 6,212,563) and Laubach et al. (US Patent 6,028,860) as applied to claim 12 above, and further in view of Woundy (US Patent 6,031,841).

With regard to claims 14 and 25, Beser further teach wherein the assigning and then sending of the IP address to the first node comprises: forwarding the DHCP request from a cable modem termination system (CMTS) to a DHCP server. **(see col.12 lines 31-67), a cable mode sending a DCHP interaction interpreted as a " DCHP request " to a DCHP server for a allocated IP address)**; receiving at the CMTS a DHCP response, including the IP address, from the DHCP server; and sending the DHCP response, including the IP address, from the CMTS to the first node. **(see col.**

13 lines 5-64), from the CMTS 12 connected to the cable modems 16a-i receiving configuration information such as IP address from the CMTS 12).

However, Beser do not teach wherein in the SID is assigned and sent by the CMTS during a ranging process between the first node and the CMTS. **Woundy disclose having a CMTS allocating a cable modem (CM) a service ID (SID), (see col. 2 lines 40-55).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement a service ID which taught by Woundy into Beser cable system efficient reserving services that are associated with a cable modem. One will have the motivation to utilize a service ID to control available resources for a user.

With regard to claims 19 and 30, However, Beser do not teach wherein the one or more unique first node IDs include a DOCSIS Service ID for the first node. **Woundy disclose having a CMTS allocating a cable modem (CM) a service ID (SID), (see col. 2 lines 40-55).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement a service ID which taught by Woundy into Beser cable system efficient reserving services that are associated with a cable modem.

One will have the motivation to utilize a service ID to control available resources for a user.

6. **Claims 22 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Beser (US Patent 6,212,563) and Laubach et al. (US Patent 6,028,860) as applied to claim 12 above, and further in view of Rekhter et al. (US Patent 6,339,595).

With regard to claims 22 and 33, However, Beser do not teach wherein the first VPN uses a Multiprotocol Label Switching Protocol (MPLS). **Rekhter et al. disclose MPLS mechanisms associated with a VLAN interpreted as a "VPN", (see col. 43 lines 1-25).**

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement the VPN-MPLS mechanism which is taught by Rekhter et al. into Beser cable system efficiently providing wide-area connections to external networks. One will have the motivation to implement a virtual scheme within a network in order to provide a scaled down network whereby reducing cost of physical components needed for communication.

Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fijolek et al. (US Patent 6,240,464)

Hrastar et al. (US Patent 6,249,523)

Shutte et al. (US Patent 6,178,455)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEWANDA SAMUEL whose telephone number is (571)270-1213. The examiner can normally be reached on Monday- Thursday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2464

/DeWanda Samuel/
Examiner, Art Unit 2464
3/26/2010